

# Should We Still Lecture or Just Post Examination Questions on the Web?: the nature of the shift towards pragmatism in undergraduate lecture attendance

SARA DOLNICAR

*School of Marketing and Management, University of Wollongong, Northfields Avenue, 2522 Wollongong, NSW, Australia*

**ABSTRACT** *An empirical study was conducted to gain an understanding of the motivations of undergraduate students in attending lectures. Students were highly heterogeneous regarding their reported lecture attendance motivations, with two segments representing prototypical extremes. The student group labelled 'idealists' in this study reported genuinely enjoying lectures, were mature aged students with work experience and more frequently in the arts subjects surveyed. Students labelled 'pragmatics' in this study were most highly represented in the commerce subjects surveyed, were among the younger students, reported attending lectures to get the information they need to succeed in the subject and reported the lowest lecture attendance while achieving the highest grade point average of the students in the study. Generally, as opposed to the findings of previous studies into reasons for lecture attendance in the 1970s, a shift towards pragmatism among students seems to have occurred and now defines the reality of the tertiary education environment.*

**Keywords:** student motivation; lecture attendance; student pragmatism

## Gaps in Knowledge

The motivation for this study was to understand the reasons for and patterns of lecture attendance by students. An empirical study was conducted to gain more insight into what moves undergraduate students to attend lectures, to determine whether there are systematic differences between groups of students and, if so, what the nature of these differences might be. The research questions guiding the study included the following.

1. What motivates students to attend lectures?
2. Are there differences in lecture attendance across faculties?
3. Is there an association between student evaluation of the lecture and/or the lecturer and the level of students' lecture attendance?

4. Is lecture attendance higher if the subject is compulsory?
5. Are personal student characteristics (age, nationality, family status, and workforce status) associated with lecture attendance levels?
6. Are there groups of students (student segments as opposed to individuals) who differ with regard to their lecture attendance motivation?

### Prior Investigations

What kind of lectures do students value? A broad range of student variables (cognitive, affective, motivational and behavioural) has been found to be related to effective student learning within, and as a result of, lectures (Perry, 1997). Seminal studies into lecturing that are still highly influential include the comprehensive review of the (then) literature on lecturing by Feldman (1976) that reported that the lecturing dimensions students ranked most highly were knowledge, stimulation of interest, clarity of explanation, enthusiasm and organisation. Bligh's (1972) now old but still highly influential meta-analysis of lecturing studies indicated that effective lectures offer the excitement of intellectual discovery; the presentation of challenging and provocative ideas, arguments and counter-arguments. Students in Sheffield's (1974) study pointed to the importance of the lecturer's clear love of their subject.

Later studies, for example Centra (1990) and Isaacs (1992), identified the importance of the dimensions organisation, clarity enthusiasm and interaction. Over the years various studies have indicated the importance placed by students on the enthusiasm generated by the lecturer in making a lecture effective. These conclusions were supported by Abrami *et al.* (1982), who carried out a meta-analysis of 12 studies of expressiveness in lecturers and concluded that lecturer expressiveness influences students' attitude to both the lecturer and the subject. Enthusiasm was also the key to effective lectures for students in a study by Murray (1983). Further, expressive, enthusiastic teaching behaviours led to higher levels of student achievement and higher student ratings than did non-expressive and non-enthusiastic behaviours (Murray, 1997). McKeachie (1979) indicated that the lecturer's enthusiasm affected student motivation. The communication of enthusiasm for the topic by the teacher is a significant factor in effective lectures (Bligh, 1972; Brown & Atkins, 1988; Ramsden, 1992; McKeachie, 1979; Murphy, 1998; Browne & Race, 2002; Exley & Dennick, 2004).

The ability of the lecturer to make knowledge meaningful through introducing 'real world' and research applications into the lecture has been noted as important to students. Effective lectures generate understanding through human interest (Bliss & Ogborn, 1977; Ogborn, 1977), relate new knowledge to students' prior knowledge (Mayer, 1987) and place knowledge into a meaningful context (Gibbs, 1992). The effectiveness of lectures that value the excitement of intellectual discovery, the presentation of challenging and provocative ideas, arguments and counter-arguments, debates, problems, paradoxes and dilemmas is well documented by Bligh (1972) and supported by Isaacs (1992). Biggs (1999), Browne and Race (2002), Laurillard (1993), Ramsden (1992) and many others have referred to the importance of having students apply information within the lecture.

Other reasons that students value lectures include the ability of the lecturer to make knowledge meaningful. Students in Sheffield's study (1974) stressed the importance of the lecturer conveying principles rather than details. Ogborn (1977) and Bliss and Ogborn (1977) illustrated the importance of generating understanding for lectures to be effective. Hunter and Tetley (1999) found enjoyment to be the main factor for attendance, followed by

students' concerns that the subject matter may be too difficult to understand without attending lectures.

Large class sizes may have a negative influence on student ratings of teacher effectiveness and skills (Feldman, 1984; Gibbs *et al.*, 1996) and on motivation levels (Crittenden *et al.*, 1975). It is possible that this might affect lecture attendance. Students in large classes have complained of losing interest because of long periods of inactivity, the distance from the lecturer and lack of variety in lectures (Ward & Jenkins, 1992).

However, it should not be assumed that all students attend lectures because they provide effective learning experiences. Some students will attend lectures in order to acquire current information (Bligh, 1972; McKeachie, 1979; Murphy, 1998; Exley & Dennick, 2004). Students may attend lectures because the lecture makes it easier for them to understand the material within the subject, which is related to the lecturer's ability to clearly explain conceptually difficult material. Murphy (1998) indicated the importance students place on clear explanations. Land (1985) summarised lecturing studies over 10 years and discovered that achievement scores were higher for students attending lectures where explanations were clear and specific than for those attending lectures without this characteristic. Clarity within lectures correlated with student learning in studies by Solomon *et al.* (1964) and Feldman (1989). Land (1985), Bligh (1972) and Isaacs (1992) indicated the importance of the ability of lecturers to analyse and synthesise a great deal of complex material, make it simpler for the students, and to explain it clearly. Students place high value on clarity and structure (Brown & Atkins, 1988). Ramsden (1992) also referred to the importance of the provision of structures and frameworks and this is supported by other writers, for example Exley and Dennick (2004) and McKeachie (1979).

Assessment is the key to students' understanding of what knowledge is important in a subject (Ramsden, 1992; Biggs, 1999). Some students may attend lectures to discover information that will help them understand the nature, scope and standards required in their assessment tasks and to glean hints about topics that may appear in examination questions (Browne & Race, 2002).

Some studies into lecture attendance provide clues as to why students may not attend lectures. The pressure of competing assessment and learning tasks, causing a need to work on assignments, and the inconvenient timing of lectures and sometimes poor quality of lecturing and lecture content were noted as significant factors in students' lecture attendance (Hunter & Tetley, 1999). Inaudibility and incoherence, failure to pitch at an appropriate level, not emphasising key points and poor visual support were noted as reasons for non-attendance by students in studies by Brown and Daines (1981a,b) and Brown and Bakhtar (1983).

Disciplinary differences may exist, however, these are not clear. Referring to various studies of lecturing, Brown and Atkins (1988, p. 14) stated 'whereas science students tend to see lectures as a way in to reading, for arts students lectures ideally follow reading and help them to interpret what they have read'. Brown and Daines (1981a) concluded that science students value logical and structured lectures more highly than arts students while arts students value insights and new perspectives. Nevertheless, Erdle and Murray (1986) concluded from comparisons of lecturing effectiveness that the constituents of effective teaching do not vary markedly across the academic disciplines in arts, humanities, social sciences and natural sciences. Hunter and Tetley (1999) found significant differences in lecture attendance, both quantitatively and with regard to the motivations of attending and not attending.

**Empirical Study Design**

The empirical study was conducted on a regional Australian university campus and followed a two-stage procedure. In the exploratory stage a literature review, cartoon tests and short interviews were conducted with 100 randomly selected students on campus to gain insight into the reasons and motivations for lecture attendance, as well as possible co-variables that might be influencing the attendance rate.

The information from this stage was used to develop a two page questionnaire. The collection of student data took place in lectures across six faculties on campus with the permission of the respective lecturers. The student questionnaire included questions about the students (degree, age, nationality, grade point average, family status and work status), questions about the lecture in which they completed the survey (organisational unit at the university offering the subject, quality evaluation of the lecture and the lecturer, estimated difficulty level of the subject and motivations to attend lectures in this subject) and questions on the general motivation to attend lectures and attendance rates, both for this particular subject as well as for general lectures.

For logistical reasons a random sample was not feasible and a convenience sample of lecturers willing to support the research project was approached for permission to survey their classes and to complete a questionnaire on their teaching. The questionnaire was completed on a voluntary basis. The final sample consisted of 623 students distributed over six faculties, but only 612 indicated the organisational unit at the university offering the subject (Table 1).

The sample characteristics are as follows: 80% single without children, 4% single with children, 8% partnered or married without children and 5% partnered or married with children (3% indicated the 'other' category). Australian and New Zealand students made up 74% of the sample, 17% were from Asian countries, 4% from the USA, 4% from Europe and small proportions from South or Latin America and Africa. The largest age group was 18–20 year olds (43%), then 21–23 (36%), 24–26 (11%), 27–29 (3%) and ≥30 (7%). They had, on average, worked for almost 5 years, had attended 80% of the lectures offered in the subject in which the survey was conducted and reached a 69% grade point average.

**Reasons for Lecture Attendance**

Students were provided with a list of reasons for attending lectures and asked to respond to these on a binary scale, stating only whether they applied to them or not. They were presented with the same list of reasons twice, once with respect to the subject in which the survey was conducted and once with regard to all of their subjects. It can be seen that there

TABLE 1. Student sample distribution across faculties

	Frequency	Valid per cent
Arts	156	25.5
Commerce	294	48.0
Engineering	33	5.4
Health & behavioural science	53	8.7
Informatics	71	11.6
Science	5	0.8
Total	612	100.0

are only minor deviations from the subject-specific to the general evaluation of students (Table 2). The reasons that drive the majority of students to lectures are to find out what they are supposed to learn, not to miss important information and to find out about assessment tasks. Enjoyment and derivation of enthusiasm from lectures seem to be rarely found reasons.

Students were also asked to rate the quality of the lecturer and the quality of the lecture as they perceived it on a percentage scale. On average, students rated the lecture quality at 62% and the lecturer quality at 66%, they had attended 9 out of 11 lectures held so far in the subject in which the survey was conducted and intended to attend an average of 13 lectures. This information has to be taken with care, as it seems that some faculties offer more than 13 lectures.

This descriptive information based on the entire sample of students provides insight into the strongest drivers of lecture attendance. Thus, providing information about what they have to learn as well as clarifying assessment tasks are measures which will, on average, attract most students to attend lectures. Knowing which factors are most important on average, however, does not allow any conclusions about which students are driven by which reasons. The procedure of averaging is likely to cover heterogeneity between individuals or like-minded groups of students, thus not capturing the full picture. For this purpose two further investigations were undertaken: (i) the association between personal characteristics and reasons for lecture attendance was studied; (ii) the existence of groups of students who are like-minded with regard to the reasons of attending lectures was investigated.

### The Association of Personal Characteristics with Lecture Attendance

A number of *a priori* reasons for differences in lecture attendance were investigated, based on the formulated research questions.

First, it was assumed that lecture attendance might vary across faculties (research question 2). The (self-reported) attendance rate (i.e. the attendance rate independent of the subject in which the survey was conducted) differed between faculties, with science students attending most often, followed by arts students, with commerce students having the lowest attendance rates (ANOVA  $P < 0.001$ ).

TABLE 2. Reasons to attend lectures

	Agreement for subject under study (%)	General agreement (%)
Find out what I am supposed to learn	75	78
Don't want to miss important information	68	72
Find out about assessment tasks	52	59
Make sure I learn fundamentals	38	45
Easier than learning it myself	37	43
Make knowledge meaningful	35	39
Expected to be there	25	30
Enjoy them	19	21
Find out 'real word' application	18	21
Work on problems	15	22
Enthuses me	13	17
Find out latest thinking	13	20

The attendance rate in the particular subject in which the survey was conducted resulted in science, health and behavioural sciences and engineering students reporting the highest attendance rates and commerce reporting the lowest levels ( $P < 0.001$ ).

Of course, these findings have to be interpreted with care, as the number of students is as low as five in the science area. These findings regarding disciplinary differences can consequently be taken as indicative only and hypothesis generating for a follow-up study. They appear to support prior work by Brown and Atkins (1988) and Brown and Daines (1981a), who found significant differences in learning requirements by disciplines, and Hunter and Tetley's (1999) results, that significant differences in lecture attendance and reasons for lecture attendance exist between students of different faculties.

Both the reported quality of the lecture and the quality of the lecturer are significantly and positively correlated with lecture attendance (Pearson correlation  $P < 0.01$ ) (research question 3), as is the age of the students (research question 5). While none of the prior work on the importance of lecturer characteristics has used one single global measure of evaluating the lecturer, these findings support results focusing on narrower definitions of lecturer style, as, for instance, the enthusiasm and interaction level (Abrami *et al.*, 1982; Murray, 1983, 1997; Centra, 1990; Isaacs, 1992), relating new knowledge to students' prior knowledge (Mayer, 1987) and placing knowledge into a meaningful context (Gibbs, 1992).

Surprisingly, whether a subject is compulsory is not associated with the lecture attendance level (research question 4). Neither is the nationality of students (research question 5). Both led to insignificant ANOVA results based on sufficient sample sizes.

Whether students work or not is, however, significantly associated (ANOVA  $P < 0.01$ ) with levels of attendance (research question 5). However, the direction of association is the opposite of what might be expected: working students attend on average 15 lectures per session while students who do not work attend on average only 12. The effect of full-time employment has, to the author's knowledge, not been studied before. The finding that full-times students attend more lectures points in the direction of students' mind sets possibly being more important than mere socio-demographic factors and characteristics of the lecture design and presentation.

### Similarly Minded Student Groups

A cluster analysis was conducted to investigate research questions 6 and 7 (whether student segments exist or can be constructed which differ with regard to their motivations to attend lectures as well as additional, descriptive characteristics).

While the section on personal characteristics and their association with lecture attendance and beliefs about lecture attendance provided some valuable insight, it implicitly assumes that the researcher is aware of all the potential reasons that could be causing different views on lecture attendance. The approach taken in this section is the precise opposite and thus represents a complementary analysis: the reason for segmenting the students in a data-driven manner is that prior assumptions about which co-variables are influential may be incomplete or sub-optimal for the problem at hand. The aim is to determine if groups of students can be identified that differ only in their reasons for lecture attendance and to then (*ex post*) analyse in which way such groups differ.

Universities could use such information in a very similar way to companies: they could identify which motivations they can best satisfy and communicate such strengths to particular student groups. For such groups a university that best responds to their views on tertiary education will offer a unique selling proposition and thus have a competitive



advantage in the tertiary education market. On the extreme negative side the example would be 'postbox universities' selling degrees to satisfy students' needs to have a degree without learning. On the positive side a university could target students who are interested in being able to translate theoretical knowledge into practical applications and thus make use of a student pre-selection process best matching their strengths. In the long-term this would lead to providing the highest quality service to those students rather than having to satisfy the requirements of highly heterogeneous student groups, which is likely to be impossible.

Eight student segments emerged as the most stable partitioning solution based on 12 investigated reasons for attending lectures. The stability of segment solutions with 3–10 clusters was investigated. Stability analysis is necessary because cluster analysis is an exploratory method. This means that if only one computation is undertaken the emerging solution could theoretically be a very unrepresentative random solution. To avoid this, a large number of computations is undertaken. Another issue in cluster analysis is how to determine which optimal number of clusters (or segments or student groups) is selected. Again, this question has to be determined by data structure analysis before the actual grouping task is undertaken (for a review of essential methodological considerations in the context of clustering data see Dolnicar, 2002, 2003). Therefore, for each number of clusters within this range, 50 replications were computed and pair-wise student assignment matches were counted. (This procedure of choosing the number of clusters most appropriate for the data set was suggested by Dolnicar *et al.*, 2000.) The eight cluster solution emerged as most stable.

Students answered the motivation questions in a very simple way, only stating that each of the listed aspects is or is not a reason for them to attend lectures.<sup>[1]</sup> This way of questioning led to a binary (only 0s and 1s contained) data block of dimensions 12 (variables)  $\times$  623 (students). A partitioning algorithm called the topology representing network (TRN) (Martinetz & Schulten, 1994) was used to form the segments. The TRN randomly chooses representatives for each one of the segments. Then each of the respondents is compared with each of the representatives and assigned to the one with the most similar values. After assignment to a group, the value of the representative is modified to capture the changes in the group caused by adding a new member. This process of assigning and adapting representatives is repeated for all respondents multiple times, leading to a finer and finer grouping and ending when no significant changes in membership assignments occur anymore.

In order to interpret the resulting student segments, profiles are drawn that show their pattern of reasons to attend lectures (Figure 1). This figure includes one chart per segment, where the columns represent the percentage of segment members who agree with every single lecture attendance motivation listed. The black horizontal line indicates the total students sample average (these values are therefore equal to the percentages in column 2 of Table 2). Segments are consequently best characterised by those motives for lecture attendance that deviate most from the total sample average as the sample average describes the mean values for all respondents, whereas the segment profiles depict the reasons to attend lectures specific to segments. Two of these segments are artefacts that emerge from the partitioning procedures: one demonstrates extremely low agreement with each one of the motives, one a very high agreement. These two segments (segments numbers 1 and 2) are consequently not interpreted and have been omitted from Figure 1. The remaining student segments can be characterised as follows.

Segment 3 (7% of the sample) represents the students who are genuinely enthusiastic about attending lectures. In this study they are consequently labelled 'idealists'. All of them

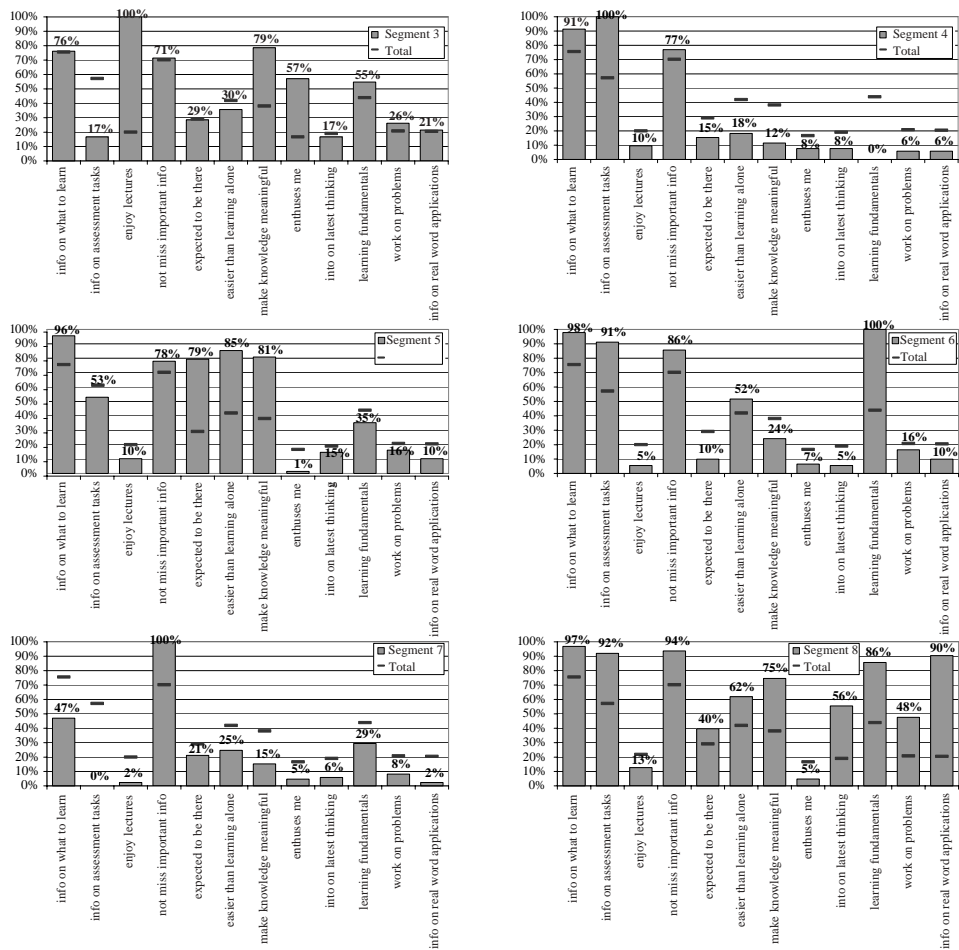


FIGURE 1. Psychographic student segments.

stated that they enjoyed lectures, while two-thirds felt enthused by the lectures and about 80% reported that the lectures made the knowledge meaningful. Segment 4 (17%) represents students who reported the opposite view. These students are referred to as 'pragmatics'. They reported wanting to know what they needed to learn, to get information about assessment tasks and to make sure not to miss any relevant information. Students in segment 5 (11%) reported similar motivations to the 'pragmatics'. However, they also reported the feeling that attending lectures was easier than learning alone and that they made knowledge meaningful. This group thus differs from the pure pragmatic perspective in that content of the subject was important. This group is referred to as 'averagely motivated students', as they seem to be interested in formal information, but not very enthusiastic about attending lectures. Segment 6 (15%), labelled the 'fundamentals-oriented students', again reported sharing the main pragmatic lecture attendance motives, but additionally reported that lecture attendance assured learning the fundamentals of the subject. Segment 7 (14%) presents itself as the most minimalist among the pragmatic motivation groups and was labelled 'minimalists'. Their only reported motivation to attend



lectures was not to miss relevant information. Finally, segment 8 (11%) reported that most of the listed reasons applied, except for enjoying lectures and feeling enthused by them. In this study this group is labelled the 'everything but pleasure' segment.

A number of descriptive pieces of information can now be derived from these segments, which were constructed on the basis of general lecture attendance motives. These differences are summarised in Table 3, which includes the metric variables, and Table 4, which includes the categorical and ordinal variables. The cells with the strongest positive deviations from the expected values based on the marginal are highlighted in bold, while strong negative deviations are in italic. The two segments that seem to represent the most distant motivation patterns on the continuum of segments can be further described as follows: the 'idealists' are older students, more than half of them work (and consequently they have the highest average work experience level in years) and they are mostly studying arts subjects. They rate the quality of the lecture higher than any other segment does.

The 'pragmatics' are over-represented in the Commerce and Informatics faculties, tend to be the youngest students on campus, are more often than expected of Australian origin and less frequently than expected Asian students (where 'expected' always refers to the expected number that occur based on the representation of this subgroup in the sample). 'Pragmatics' give the lecture and the lecturers the worst marks of all segments, report the lowest lecture attendance rates and yet achieve the highest grade point averages.

## Conclusions and Limitations

The main reasons for students to attend lectures are to find out what they are supposed to learn, not to miss important information and to find out about assessment tasks. This seems to reflect some of the more recent study results investigating lecture attendance (Browne & Race, 2002) while representing a dramatic motivational shift as opposed to the numerous studies that were conducted into lecture attendance motivation in the 1970s

TABLE 3. Metric segment descriptors (mean values)

Segment	Quality of lecture	Quality of lecturer	How many lectures attended	Typical attendance rate	Years of work	Grade point average
1	60	64	8.5	11.2	3.4	70
2	70	73	9.6	14.2	7.1	70
3 (Idealists)	<b>68</b>	66	9.5	18.3	<b>7.1</b>	70
4 (Pragmatics)	55	59	7.6	10.8	4.7	<b>72</b>
5 (Averagely motivated students)	9.6	12.0	4.2	70		
6 (Fundamentals-oriented students)	60	65	8.8	13.1	3.7	66
7 (Minimalists)	62	69	<b>10.2</b>	<b>15.1</b>	3.3	69
8 (Everything but pleasure)	<b>68</b>	<b>73</b>	8.8	11.0	4.5	64
Total	62	66	8.93	12.8	4.8	69
ANOVA <i>P</i> value	<0.01	<0.01	n.s.	<0.01	n.s.	<0.04

Cells with the strongest positive deviations from the expected values based on the marginal are highlighted in bold, while strong negative deviations are in italic.

TABLE 4. Ordinal and categorical segment descriptors (percentage values)

		1	2	3	4	5	6	7	8	$\chi^2$ P value
Faculty	Arts	18	40	57	16	25	23	32	14	<0.001
	Commerce	53	32	17	<b>62</b>	46	49	45	59	
	Engineering	5	11		5	4	<b>9</b>	4	5	
	Health & behavioural science	15	11	12	2	9	7	8	10	
	Informatics	10	7	14	<b>14</b>	<b>16</b>	12	7	13	
	Science				1			<b>5</b>		
Working	No	68	54	48	69	<b>81</b>	<b>77</b>	73	73	<0.01
	Yes	32	46	<b>52</b>	31	19	23	27	27	
Age	18–20	33	47	38	<b>52</b>	46	<b>53</b>	40	35	<0.001
	21–23	40	35	19	30	40	34	46	38	
	24–26	18	9	10	11	10	2	8	21	
	27–29	6	2	7	1	1	3	2		
	≥30	3	7	<b>26</b>	7	3	8	4	6	
Family status	Single without children	74	72	69	81	<b>93</b>	85	81	78	
	Single with children	6	7	2		1	2	4	6	
	Partnered/married without children	7	7	7	10	4	5	<b>13</b>	8	
	Partnered/married with children	6	5	21	3		3	1	5	
	Other	6	7		7	1	4	1	3	
Nationality	Australia	71	77	67	<b>83</b>	65	<b>82</b>	65	71	<0.01
	New Zealand				2					
	USA	2	7	7	1	6	1	4	5	
	Asia	23	14	17	10	19	10	<b>24</b>	21	
	South or Latin America		2		2			1	2	
	Europe	4		5	2	<b>9</b>	5	4	2	
	Africa				1	1	1	2		

Cells with the strongest positive deviations from the expected values based on the marginal are highlighted in bold, while strong negative deviations are in italic.

(Bligh, 1972; Sheffield, 1974; Feldman, 1976), in which factors like stimulation of interest, gaining knowledge and enthusiasm dominated the student views. However, students are found to differ both with regard to their motivations as well as the level of lecture attendance.

A number of *a priori* reasons for differences in lecture attendance were investigated, based on the formulated research questions. It was found that lecture attendance varies across faculties (an association which has emerged in prior studies; see, for instance, Brown & Atkins, 1988; Hunter & Tetley, 1999), that older students and students who work attend more lectures and that good evaluations of lectures and lecturers are positively associated with attendance levels.

To investigate differences in student motivation student responses were grouped into homogeneous segments based on their motivation patterns to attend lectures. At one extreme of the student motivation continuum 'idealists' could be identified who genuinely enjoyed attending lectures and felt enthused by them. They can be characterised as being older and were more frequently encountered in arts subjects. 'Pragmatics' are located at the

other extreme. They mainly wanted to obtain the information they needed to be successful in the subject. The latter were younger, were more frequently found studying commerce, expressed a low opinion of lecturers and lecture quality and reported the lowest attendance rates in the study.

While the main aim of this study was to gain an insight into student's reasons for attending lectures in today's tertiary education environment in Australia, a number of educational consequences and thoughts emerge from these findings: do lectures nowadays still fulfil their purpose of transferring knowledge or have they largely become pro-forma offers which are used by a minority of students? If 'pragmatics' (students who attend the fewest lectures) achieve the best results in their subjects, are we using poor assessment tasks to measure learning or are we indeed such bad lecturers that not listening to us improves student marks? Would it be better to try to aim at shifting attitude patterns back to where they were in the 1970s and motivate students to attend more lectures (in which case a detailed analysis of the 'idealist' and 'pragmatic' segments would be required to investigate ways of implementing such an attempt at shifting student motivations) or should we accept changing tertiary education realities and offer the information they seek online and stop offering lectures? If the most enthusiastic students are older and working, should lectures be offered in the evenings, so the most motivated students can actually attend them?

The two major limitations of this study are the small sample sizes in certain faculties and the adopted convenience sampling procedure. Despite these problems, all results generate valuable insights which can be used as empirical hypotheses for representative follow-up studies. Analyses based on the total sample (associations) are not crucially affected by the sampling problems, neither is the segmentation solution, as long as the proportions are not interpreted as valid for the entire student population. This means that all findings about the existence and characteristics of those segments are valid; only the percentage representation in the total student population cannot be assured. The single most critical analysis is the investigation of differences across different faculties, as there were only very small sample sizes available from certain faculties. These results should be taken as indicative only.

Other minor weaknesses of the study include the fact that lecture attendance was measured in a self-reported way. This clearly assumes that honest answers were given by the respondents. A better measure is unavailable due to the sizes of the lectures and, consequently, a lack of class roll information.

## **Acknowledgements**

I am very grateful to Maureen Bell from the Centre for Educational Development and Interactive Resources at the University of Wollongong for her support and extensive commentary on the paper. This study was conducted with my students for my students and future student generations. The survey administration and data entry was implemented with the support of 50 students studying applied marketing research under the guidance of their tutors Kye Ling Gan, Geoffrey Chard and Andrew Smith in autumn 2004. I thank all of them for their support and hope that the findings will stimulate discussion about optimal lecturing strategies in contemporary tertiary education reality. I also sincerely thank all lecturers who were so kind as to sacrifice some of their teaching time and allow us to survey their students. They remain anonymous, as lecturer evaluation questions were included in the survey.

## Note

- [1] There is extensive literature on the effects of response options in surveys. It has been shown in numerous studies that such binary questions render the same mean results and that they are equally reliable, equally valid and have the same underlying factorial structure (Bendig, 1954; Peabody, 1962; Komorita, 1963; Komorita & Graham, 1965; Jacoby & Matell, 1971; Matell & Jacoby, 1971; Martin *et al.*, 1974; Percy, 1976; Remington *et al.*, 1979; Preston & Colman, 2000). So it can be safely assumed that this is a valid form of questioning.

## References

- ABRAMI, P.C., LEVANTHAL, L. & PERRY, R.P., 1982, 'Educational seduction', *Review of Educational Research*, 52, pp. 446–64.
- BIGGS, J.B., 1999, *Teaching for Quality Learning in Universities* (Buckingham, Open University Press).
- BLIGH, D.A., 1972, *What's the Use of Lectures?* (Harmondsworth, Penguin Books).
- BLISS, J. & OGBORN, J. (Eds.), 1977, *Students' Reactions to Undergraduate Science* (London, Heinemann).
- BROWN, G. & ATKINS, M., 1988, *Effective Teaching In Higher Education* (London, Routledge).
- BROWN, G. & BAKHTAR, M. (Eds.), 1983, *Styles of Lecturing Research and Faculty Perspectives* (Loughborough, Loughborough University of Technology).
- BROWN, G.A. & DAINES, G.M., 1981a, 'Learning from lectures', in Oxtoby, E. (Ed.) *Higher Education at the Crossroads* (Guildford, Society for Research in Higher Education).
- BROWN, G.A. & DAINES, G.M., 1981b, 'Can explaining be learnt? Some lecturers' views', *Higher Education*, 10, pp. 573–80.
- BROWN, S. & RACE, P., 2002, *Lecturing: A practical guide* (London, Kogan Page).
- CENTRA, J.A., 1990, 'Faculty evaluation and faculty development', in SMART, J. (Ed.) *Higher Education: A handbook of theory and research*, Vol. 6 (New York, Agathon).
- CRITTENDEN, K., NORR, J. & BAILLY, R., 1975, 'Size of university classes and student evaluations of teaching', *Journal of Higher Education*, 46, pp. 461–70.
- DOLNICAR, S., 2002, 'Review of data-driven market segmentation in tourism', *Journal of Travel & Tourism Marketing*, 12(1), pp. 1–22.
- DOLNICAR, S., 2003, 'Using cluster analysis for market segmentation—typical misconceptions, established methodological weaknesses and some recommendations for improvement', *Australasian Journal of Market Research*, 11(2), pp. 5–12.
- DOLNICAR, S., GRABLER, K. & MAZANEC, J., 2000, 'A tale of three cities: perceptual charting for analysing destination images', in WOODSIDE, A.G., CROUCH, G.I., MAZANEC, J.A., OPPERMAN, M. & SAKAI, M.Y. (Eds.) *Consumer Psychology of Tourism, Hospitality and Leisure* (Wallingford, CABI International).
- ERDLE, S. & MURRAY, H.G., 1986, 'Interfaculty differences in classroom teaching behaviours and their relationship to student instructional ratings', *Research in Higher Education*, 14, pp. 115–27.
- EXLEY, K. & DENNICK, R., 2004, *Giving a Lecture: From presenting to teaching*, (London, Routledge).
- FELDMAN, K.A., 1976, 'The superior college teacher from the students' view', *Research in Higher Education*, 30, pp. 583–645.
- FELDMAN, K., 1984, 'Class size and college students' evaluations of teachers and courses: a closer look', *Research in Higher Education*, 21, pp. 45–116.
- FELDMAN, K.A., 1989, 'The association between student ratings of specific instructional dimensions and student achievement', *Research in Higher Education*, 30, pp. 583–645.
- GIBBS, G., 1992, *Teaching Large Classes in Higher Education* (London, RoutledgeFalmer).
- GIBBS, G., LUCAS, L. & SIMONITE, V., 1996, 'Class size and student performance: 1984–94' *Studies in Higher Education*, 21, pp. 261–73.
- HUNTER, S. & TETLEY, J., 1999, 'Lectures. Why don't students attend? Why do students attend?', paper presented at the *HERDSA Annual International Conference*, Melbourne, Australia, 12–15 July.
- ISAACS, G., 1992, 'Ends and means: what learning goals are served by what methods?', *Research and Development in Higher Education*, 15, pp. 205–12.
- LAND, M.L., 1985, 'Vagueness and clarity in the classroom', in HUSEN T. & POSTLETHWAITE, T.N. (Eds.) *International Encyclopaedia of Education: Research studies* (Oxford, Pergamon Press).
- LAURILLARD, D., 1993, *Rethinking University Teaching: A conversational framework* (London, Routledge).
- MARTINETZ, T. & SCHULTEN, K., 1994, 'Topology representing networks', *Neural Networks*, 7(5), pp. 507–22.
- MAYER, R.E., 1987, *Educational Psychology: A cognitive approach* (Boston, Little Brown).

- MCKEACHIE, W., 1979, 'Student ratings of faculty: a reprise', *Academe*, 62, pp. 384–97.
- MURPHY, E., 1998, *Lecturing at University* (Perth, Paradigm Books).
- MURRAY, H.G., 1983, 'Low-inference classroom teaching behaviours and student ratings of college teaching effectiveness', *Journal of Educational Psychology*, 75, pp. 138–149.
- MURRAY, H.G., 1997, 'Effective teaching behaviors in the college classroom' in PERRY, R.P. & SMART, J.C. (Eds.) *Effective Teaching in Higher Education: Research and practice* (New York, Agathon Press).
- OGBORN, J. (Ed.), 1977, *Practical Work in Undergraduate Science* (London, Heinemann).
- PERRY, R.P., 1997, 'Perceived control in college students: implications for instruction in higher education', in PERRY, R.P. & SMART, J.C. (Eds.) *Effective Teaching in Higher Education: Research and practice* (New York, Agathon).
- RAMSDEN, P., 1992, *Learning to Teach in Higher Education* (London, Routledge).
- SHEFFIELD, E.F., 1974, *Teaching in Universities: No one way* (Montreal, Queen's University Press).
- SOLOMON, D., ROSENBERG, L. & BEZDEK, W.D., 1964, 'Dimensions of teacher behaviour', *Journal of Experimental Education*, 33, pp. 23–401.
- WARD, A. & JENKINS, A., 1992, 'The problem of teaching and learning in large classes', in GIBBS, G. & JENKINS, A. (Eds.) *Teaching Large Classes in Higher Education* (London, Kogan Page).

Copyright of Quality in Higher Education is the property of Carfax Publishing Company. The copyright in an individual article may be maintained by the author in certain cases. Content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.